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REPORT OF THE SECRETARY-GENERAL ON THE ACTIVITIES OF THE OFFICE OF INTERNAL OVERSIGHT SERVICES

Note by the Secretary-General

1. Pursuant to paragraph 5 (e) (i) of General Assembly resolution 48/218 B of 29 July 1994, the Secretary-General has the honour to transmit, for the attention of the General Assembly, the attached report, conveyed to him by the Under-Secretary-General for Internal Oversight Services, on the audit of the United Nations access control system project.

2. In transmitting the report, the Secretary-General considers it useful to present the views expressed by the Department of Administration and Management on the project and on certain major conclusions of the Office of Internal Oversight Services as reflected in its report. These are as follows:

> "At the outset, it should be recalled that it was Management that decided in the summer of 1994, after reviewing the project and the causes for the delays encountered, not to activate the access control system. The decision, which was publicly announced, was based on the judgement that the system, while capable of implementation technologically, did not meet the security concerns of the Organization in an efficient and cost-effective manner. The findings of the Office of Internal Oversight Services do not dispute that management judgement.
>
> "In many respects, the project, at inception, was driven by a sense of urgency to provide an additional measure of security. However, it is acknowledged that at the time the project was formulated, inadequate attention was given to assessing how much added security the planned system would afford and the operational feasibility of the system on a day-to-day basis.
>
> "It is also acknowledged that, during the course of implementation of the project, changes in the assignment of key personnel led to a lack of continuity in project management, including oversight by senior management.

"As concerns the selection of the contractor, it should be emphasized that, as noted by the Office of Internal Oversight Services, requests for proposals were sent to 31 companies, of which 8 submitted proposals. Three companies, which were considered to be the most responsive to the requirements and general specifications of the request for proposal, were short-listed; one of these companies subsequently withdrew. The two remaining finalists, Westinghouse Electric Company (WEC) and NDC Automation, Inc. (NDC), were both deemed to have had adequate expertise, proven reliability and the technological support for their respective systems.

"For the final selection of the vendor, a systems requirement criteria evaluation matrix was developed and utilized; in that matrix, several elements identified as critical to the project were quantified. Thus, the Department of Administration and Management disagrees with the conclusion of the Office of Internal Oversight Services that the selection of the vendor to which the contract was awarded was not based on a set of commonly applied criteria.

"Both finalists were companies with experience as system integrators. Both companies' proposals entailed the use of sub-contractors in order to incorporate the technologies of the latter into a complete working system, including cards, hands-free card readers, imaging systems, computerized data-collection technology, turnstiles and cash registers.

"One major technical difference between the two proposals was that NDC proposed two separate systems, using two different operating and database systems, one for identity cards and readers and another for garage operations. This approach would have required additional hardware, software and staff resources and would have exposed the system to a higher risk of component failures. WEC, in contrast, offered a unified operating and database system, which was preferred as the most comprehensive and cost-effective technical approach. This conclusion was later validated in the implementation of the Integrated Management Information System (IMIS), which has also focused on a centralized approach to database management.

"Another major consideration in the selection was that the NDC proposal, because of the limited technology of its card readers, would have required two sets of turnstiles, one for entry and one for exit. This would have required the installation of twice as many turnstiles at each location, thus doubling the cost of this component and increasing maintenance costs.

"There were significant differences in the costs of the two systems proposed: excluding maintenance, the NDC proposal totalled $1,547,040, while the WEC proposal totalled $1,183,440, or $363,600 less. The identity cards proposed by NDC cost $12.50 each, compared to a cost of $5.50 each for the WEC cards; the annual difference in the cost of the cards alone would consequently have been $140,000 on the basis of an estimated 20,000 cards a year. Thus, the WEC proposal was decidedly less expensive than that of NDC.

"For the reasons outlined above, the Department of Administration and Management considers that the selection of the contractor was made on an appropriate basis at the time and that proper procedures were followed.

"The Department of Administration and Management does not agree with the Office of Internal Oversight Services that testing of the system and documentation thereof were inadequate and that testing was not performed in accordance with the contract. By its very nature, the system required several tests during its development and final acceptance phases. All tests were carried out in accordance with the provisions of the contract, its amendments or modifications as required, and were duly registered in milestone charts as an integral part of the contract documents. Documents on file confirm that all tests were done when and where they were scheduled to be executed.

"When the garage access control system, essentially an accounting system linked to the Accounts Division for billing garage parking, was deleted from the contract with WEC, the testing required for this feature, which had been envisaged to cover 60 days, or 2 billing cycles, was no longer applicable and was therefore eliminated from the testing requirements.

"In summary, the Department of Administration and Management acknowledges the weaknesses in the management process for project formulation and execution as outlined above. The Department believes, however, that United Nations Regulations and Rules, particularly in respect of procurement, were respected throughout the process."

Annex

REPORT OF THE OFFICE OF INTERNAL OVERSIGHT SERVICES ON THE AUDIT OF THE UNITED NATIONS ACCESS CONTROL SYSTEM PROJECT

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I. BACKGROUND

1. The United Nations access control system was a project undertaken under the contract executed by and between the United Nations and Westinghouse Electric Corporation (WEC) on 16 March 1992 to design, develop, supply, instal, test and implement, on a turnkey basis, an electronic security and card access control system.

2. Security improvements were initially proposed in March 1987 by the then Chief of Buildings and Commercial Services Division. Three years later, a special security task force determined an urgent need to upgrade security arrangements and improve control over vehicle access to the United Nations. An initial working group was formed, consisting of representatives from the Security and Safety Service, the Buildings Management Service, the Commercial Purchase and Transportation Service and the Electronic Services Division. The group was directed to formulate the initial request for proposal for the supply, delivery and installation of an access control system, to select a vendor capable of supplying and installing the system and to provide guidance in project implementation.

3. In August 1990, the request for proposal was sent out to 31 prospective suppliers and 8 proposals were received by the designated closing date on 17 September 1990. A revised request for proposal was formulated on 26 February 1991 and was given to three remaining firms selected by the group; however, only two bids were received. On 27 August 1991, the contract was awarded to WEC.

4. The access control system, as stated in the certificate of final acceptance, was completed, tested and accepted by the United Nations on 26 May 1993. Following its acceptance, its activation was delayed for more than a year. In September 1994, it was formally announced that the system would not be put into operation and would be dismantled. The Department of Administration and Management, after reviewing the project and the causes for the delays encountered in activating the system, concluded that the system could not function efficiently as originally specified because the design was not realistic in terms of the procedures and resources required to operate and maintain it. In a note of 14 June 1994 addressed to the Under-Secretary-General for Administration and Management, the Assistant Secretary-General for Conference and Support Services stated that the system would not meet the security concerns of the Organization, and it was, therefore, not in the best interests of the Organization to activate the system.

5. The total costs incurred in the entire project amounted to US$ 1,566,358.88, broken down as follows:

	$
Contract with WEC	947 505.09
Additional cards (20,000)	110 000.00
Cost to relocate the access control system control centre to another room within the United Nations facility	37 486.00
External consultants:	
K. Jensen (appointed as project coordinator)	65 900.00
DVI Communications (drafting of the contract)	20 256.95
Contract with E.J.E.I.C. for site preparation work	385 210.84
Total	1 566 358.88

6. The total amount shown above does not include the significant cost incurred in terms of human resources by United Nations officials and staff during the entire period spent on the project from March 1990 to May 1993. As certain components, valued at US$ 250,000 by management, could have been utilized for other purposes, non-implementation of the project resulted in a net loss to the Organization of US$ 1,316,358.88.

II. SCOPE OF AUDIT

7. The audit by the Office of Internal Oversight Services of the access control system included a review of the project's initiation, planning, funding and procurement process, including award of contract as well as disbursements, testing and final acceptance by the United Nations of the system and project implementation.

8. We undertook a further review of the project, which included value-for-money audit procedures to assess managerial and programme accountability and system development audit procedures in order to identify the causes of project failure.

9. Our preliminary audit findings were discussed with the officials concerned, and their comments were taken into consideration in the preparation of the report issued on 4 May 1995. The Department of Administration and Management sent its comments to the audit report on 19 July 1995. They have been reflected in the present report.

III. SUMMARY OF AUDIT FINDINGS

10. The audit revealed management deficiencies, serious weaknesses in internal controls and flaws in procurement. Areas requiring improvement were also identified. These findings are summarized as follows:

A. Project origination

11. There was inadequate planning of the project. No feasibility study was undertaken prior to the inception of the access control system to determine its viability and cost-effectiveness.

B. Funding/budget

12. Budgetary controls were not completely respected. Contractual commitments were entered into prior to June 1991, before seeking the approval of the Advisory Committee on Administrative and Budgetary Questions (ACABQ), a practice that is contrary to the Financial Regulations.

C. Working group/consultant

13. No clear terms of reference were established for the United Nations access control system working group and for the external consultant hired by the United Nations. The responsibilities of individual employees tasked with this project were not properly defined and formalized.

D. Procurement

14. Deficiencies in the procurement process did not allow a fair and competitive bidding procedure because the original specifications for the United Nations access control system were flawed.

E. Selection of vendor

15. Weaknesses were noted in the selection of the vendor to supply, develop, install and implement the United Nations access control system.

F. Contract formulation

16. Deficiencies in the contract were noted.

G. Resolution of disputes

17. The approach of the Organization to resolving contract disputes was uncoordinated. The contract was modified to reduce the scope of work.

H. Project delays

18. The imaging system originally delivered by the contractor failed to function, causing project delay. Selection of a new card technology introduced in mid-stream caused project delays and extra cost.

I. Testing of the United Nations access control system

19. Testing of the system and documentation relating to these tests were found inadequate. Testing of the system was not performed in accordance with the contract.

J. Contract amendments

20. The contract amendment was signed ex post facto. The original provisions of the contract were amended and various important annexes were replaced.

K. System documentation

21. The system documentation of the United Nations access control system was found inadequate.

L. Warranty period

22. The one-year system warranty was wasted.

23. On the basis of the Office of Internal Oversight Services review of the project, the auditors developed recommendations aimed at improving the general procedures dealing with inception, execution, implementation and monitoring of United Nations projects, procurement procedures and contract execution. Changes in certain budgetary and accounting procedures were suggested in order to enhance financial controls.

24. The audit findings indicate a financial loss to the Organization as a result of this failed project but do not clearly establish responsibility for this loss. Therefore, this final report is being referred to the Investigation Section, which is responsible for inquiring into reports of possible violations of United Nations rules, regulations, mismanagement, misconduct, abuse of authority and waste of resources as defined in paragraph 18 of the Secretary-General's bulletin ST/SGB/273.

25. Although the Department of Administration and Management accepted certain recommendations and conclusions and took remedial action, some of the findings were still contested, as detailed below.

IV. DETAILED FINDINGS

A. Project origination

There was a lack of proper planning of the project. No project feasibility study was undertaken to determine viability and cost-effectiveness.

26. In the absence of a feasibility study to determine if implementation of an electronic card access system in the United Nations Secretariat would be viable and cost-effective, the Department of Administration and Management believes that the security reviews made by two different bodies provided an adequate basis for initiating the project. Our evaluation, however, confirmed that such reviews could not replace a feasibility study, and its absence had a negative impact on the implementation of the project. For example, an important project component, the garage access and billing control system, was deleted, while the pedestrian and vehicular access control system at the entrance gates was retained. Also, it would appear that the access control system would allow anyone in possession of a lost or stolen identification card not reported and cancelled to enter United Nations premises without hindrance. Therefore, we consider the existing system more reliable and secure compared to what was proposed.

27. If a feasibility study had been conducted, it could have prevented management from deleting an important component of the access control system in the middle of the execution stage of the project. However, the system was delivered with only the capacity to record the entry and exit time of those who passed through it, as well as identifying invalid identification cards.

28. Earlier, the Department of Administration and Management reported to ACABQ that one of its primary security concerns was the garage. Subsequent developments in the outside world confirmed that terrorist plans involving the use of vehicles were contemplated against the United Nations Secretariat building. In addition, billing and control procedures for the use of the United Nations garage facilities, which are mostly manual, were always considered rather time-consuming and ineffective.

29. The Office of Internal Oversight Services found that United Nations officials failed to confer with the Protocol and Liaison Service prior to inception of the project. This Service was not consulted during the design process in order to identify practical problems relating to the large number of temporary passes required by delegates to various short-term meetings at United Nations Headquarters. Attendees would either have had to be relegated to using the Visitors' Entrance exclusively or the United Nations would have had to incur large expenditures in identification cards to accommodate the number of such delegates.

30. Had the Protocol and Liaison Service been properly consulted or had it been a part of the working group, United Nations officials from the very beginning would have known that the project was not viable because it was incompatible with existing procedures. Experience shows that, without sufficient user involvement, system development projects have a high probability of failure. This was the case with the United Nations access control system.

31. Management claims that the Protocol and Liaison Service was consulted. We find this to be in contradiction with the assertion made by the Assistant Secretary-General of the Office of Conference and Support Services and the United Nations Security Coordinator in the report of 14 June 1994 submitted to the Under-Secretary-General of the Department of Administration and Management. It was also stated by management that the purpose of the project was to enhance security and "not to satisfy staff, diplomats or non-governmental organizations and therefore they should not be characterized as users". The Office of Internal Oversight Services disagrees with this view as it is an obvious denial of the United Nations reality.

32. As the absence of a feasibility study shows, no system development standards were established. Consequently, there was no standard methodology used in the project. Had such a methodology existed and been followed, a feasibility study, which is an initial phase of the system development life-cycle, would have been undertaken. The development of the project would have been based on a formal statement of requirements agreed to by users and the installation standards would have set the minimum requirements for system and programme documentation.

33. The management disputed the finding, stating that a formal statement of requirements was agreed to by the users with regard to computer hardware and software. However, this was precisely the problem. A specific hardware/software solution was selected that could not be integrated with the day-to-day procedures followed in the Organization. Furthermore, the Department of Administration and Management stated that, since most of the components of the access control system were off-the-shelf products, there was no system design and development required except for the garage access and billing control system and that was the responsibility of WEC. Additionally, management stated that the access control system was procured on a turnkey basis.

34. The Office of Internal Oversight Services disagrees with this position and maintains that, even with turnkey systems, certain steps in the system development life-cycle should be followed by the implementing organization. As far as the garage access and billing control system was concerned, the system development life-cycle requires significant interaction between the users and developers of the system at critical intervals in the system development process, which did not take place.

B. Funding/budget

Lack of sufficient budgetary controls. Contractual commitments entered into without advising ACABQ, contrary to existing Financial Regulations.

35. The United Nations access control system was started as a non-budgeted project and costs were not properly budgeted for prior to its inception. The project was started by concerned United Nations officials, although they had not finally decided on the particulars of how to finance this specific endeavour. Contractual commitments were entered into prior to June 1991, before seeking the approval of ACABQ, which was in contravention of financial regulation 13.1.

36. The management replied that, under the given circumstances, the budgetary modalities used were appropriate. The Office of Internal Oversight Services disagrees with this notion and points to the fact that ACABQ in its report of 15 July 1991, stated such contractual commitments ran counter to the intent of General Assembly resolution 44/203 on unforeseen and extraordinary expenses in connection with the 1990-1991 programme budget. Based on its own findings, ACABQ noted that, although the implementation of the access control system was linked to the "Gulf crisis", in fact it was related more to problems of crime prevailing in the immediate area of the United Nations. ACABQ pointed out in its report on the 1992-1993 proposed programme budget that, in view of this, it failed to comment on whether the project proposal represented the most suitable approach for addressing the question of increased security arrangements. It must be admitted, however, that ACABQ eventually approved the budget expenditures for the project, given that the project had already commenced.

C. Working group/consultant

Lack of terms of reference for the working group and the external consultant hired by the United Nations.

37. In the absence of a project steering committee, the United Nations access control system working group could have played a crucial role in the initiation of the project, provided that it had formal terms of reference and acted in accordance therewith. Had responsibility been clearly defined and a formal delegation of authority been made, the frequent changes in key personnel would not have had such a negative impact on the project as they in fact did. Had the external consultant who had oversight responsibility been involved throughout the life of the project and his responsibilities clearly defined, the project would not have been so adversely affected.

38. We found that the Working Group convened meetings and acted collectively to raise and discuss issues relating to the access control system. However, it seldom kept the senior management informed about all major issues taken up or discussed, nor did it seek consultation or advice on final decisions. For example, when the project was not proceeding well and there was a potential that the entire system as originally specified and designed would not be delivered and completed by the vendor, the Working Group failed to inform the Assistant Secretary-General for General Services or the Chief of the Buildings and

Commercial Services Division who did not participate in meetings of the working group.

39. The management, in its response, disputed these facts, stating that it was kept fully informed at each step of the project and that there were numerous instances when management was advised in writing or participated in meetings during the various stages of the project. While we acknowledge that management was informed of certain issues, we believe there is a clear need to seek approval for key decisions, which should be documented in writing. In this context, we did not find any evidence that approval was sought or received in November 1992 when the decision was made to delete the garage access control subsystem and renegotiate the contract.

40. The external consultant commenced work on 13 August 1990, but his responsibilities were not described or defined in his special service agreement or in any document, except that he was appointed as project coordinator. His first contract expired on 12 December 1990. It was again renewed from 13 January to 13 May 1991 and 23 March 1992 to 22 September 1992.

41. According to the Department of Administration and Management, the consultant was hired to assume oversight responsibilities of the project. The Office of Internal Oversight Services noted that the consultant worked on a staggered basis and, simultaneously, was involved in the work for the World Summit on the Environment. His contract did not allow full-time administrative oversight of the project. The Office of Internal Oversight Services questions the wisdom of this decision, considering the magnitude of the project.

D. Procurement

Deficiencies in the procurement process did not allow fair and competitive bidding to assure the best possible price and service to the United Nations.

42. Again, mainly as a result of the absence of a feasibility study, the requests for proposals sent to 31 prospective bidders did not contain adequate specifications to meet the security needs of the United Nations. It did not properly define the scope of work and thereby made it difficult for potential vendors to provide a reasonable estimate of the project. Inadequacies were noted in various vendors' letters to procurement staff of the Commercial Purchase and Transportation Service.

43. The management stated, in its response, that the original request for proposal dated 1 August 1990 was formulated with the objectives of (a) identifying a state-of-the-art access control system that would generally meet the technical and security requirements of the United Nations and (b) identifying prospective contractors capable of supplying such a system. This request for proposal contained general requirements covering functional, system, implementation, training and installation information. They stated that firms that pointed out inadequacies in the request for proposal were not seriously interested and/or capable. Their replies were considered to be not responsive and were, therefore, not forwarded together with the other proposals for evaluation to the Buildings Management Service.

44. The requirements and scope of work should be defined in any request for proposal in a manner that allows vendors to be responsive. However, although requests for proposals were sent to 31 vendors, only 8 responded. After analysis, five vendors were eliminated and a revised request for proposal was submitted to the remaining three vendors in February 1991. According to management, this request for proposal provided additional and new detailed information on the pedestrian and vehicular access and delegation parking procedures.

45. We are of the opinion that the revised request for proposal should have been sent to a wider audience in view of the fact that it contained information that was not in the original request for proposal and of the small number of remaining vendors from which to choose.

46. While management disagrees with the auditors, we maintain that, on the basis of our review of the bidding process, some qualified prospective bidders were eliminated from the competition owing to a lack of clarity in the specifications.

E. Selection of vendor

Weaknesses were noted in the selection of the vendor to supply, develop, install and implement the United Nations access control system project.

47. In the opinion of the Office of Internal Oversight Services awarding the contract to WEC was not based on a set of commonly applied criteria that would have included technical competence, experience and reputation of the vendor in that particular field. Management commented that two main criteria were established for the selection of the vendor: (a) extensive experience in integrating highly technical computer driven systems and (b) the technical expertise specifically related to the provision of a security system. They further indicated that both of these criteria were fully met.

48. However, the Office of Internal Oversight Services maintains that WEC did not have sufficient experience in this specific type of project, using a highly advanced card technology. As it was only in mid-stream that Westinghouse introduced its own card technology, the United Nations access control system obviously was the first of this kind of access control system project in which the firm had been engaged and, thus, it appeared that the United Nations was supposed to be the first to use the new Westinghouse technology.

49. It also appeared that WEC did not have qualified personnel to handle the project; hence, it subcontracted to Epic Systems to develop and integrate the garage access control system software with WEC standard software and the delivery of an imaging system. For the latter, Epic Systems in turn subcontracted another firm, USIS.

50. Management describes subcontracting as a common arrangement and points to numerous instances where the results have been fully satisfactory. However, in this instance the garage access control system software and the imaging system accounted for two out of three of the major subsystems of the United Nations

access control system. Subcontracting (and further subcontracting) this proportion of the system was not a prudent practice. Layers of subcontracting serve to distance the original vendor from the project and cloud accountability. Even the relocation of the system after its delivery was subcontracted to Epic Systems.

51. The subcontractors' performance in rendering the required system or service for which they were subcontracted was poor. The imaging system failed to work when it was delivered on 18 May 1992 and was replaced by a Goddard imaging system on 15 October 1992. The software that was supposed to make up the garage access control system was not developed, thereby resulting in the deletion of the entire garage subsystem from the United Nations access control system project. Thus, it appears that WEC's capabilities in the area of systems integration were questionable.

52. The other bidder was a company with proven worldwide experience in installing hands-free access control systems. Its proposed system met the United Nations requirements without any need for subcontracting, yet WEC was chosen by United Nations officials. The working group's ratings given to these two vendors seemed to be unbalanced with regard to, inter alia, system modularity and vendor qualifications.

53. Although the Department of Administration and Management disagreed with our conclusion that WEC was not the best choice as contractor for the United Nations access control system, we would like to point out that subsequent events (inability by WEC to deliver the garage access control system, prohibitive maintenance cost, failure to meet delivery schedules of the programmed access cards and to properly test the United Nations access control system, etc.) confirmed that the choice of the contractor substantially contributed to the final rejection of the project.

54. The original proposal by WEC was US$ 812,160, plus a yearly maintenance cost of US$ 99,220 (total US$ 911,380). However, its final proposal amounted to US$ 1,332,505.09, including maintenance costs of US$ 135,000, whereas, the other bidder's proposal was US$ 1,547,040 plus maintenance costs of US$ 52,175 (total US$ 1,599,125). The reason for the price difference between the proposals originally submitted by these vendors was differences in specifications. It was found that the WEC proposal did not fully comply with the specifications issued by the United Nations.

55. The other bidder submitted a proposal that complied with the United Nations specifications in every detail. It presented more precise and specific technical specifications as compared with WEC. This vendor submitted a letter dated 25 April 1991 that specified this issue and noted that, through its contacts in the market, it had learned that another bidder had quoted a system that did not fully comply with the specifications issued by the United Nations and its price quoted was considerably lower than its quote. It then offered the United Nations a simpler system at significantly lower cost and therefore requested a renegotiation of its proposal. An Office of Internal Oversight Services review of the technical proposals submitted by these two vendors verified these facts. Examples of these are discussed below.

56. The other vendor proposed the implementation of the garage administration and access control functions in two separate computer systems. It emphasized that the garage administration and access control functions of the system were two completely separate functions. WEC proposed only one computer system for both these functions. The Office of Internal Oversight Services believes the failure of WEC to deliver the garage access control system leads to the conclusion that indeed the other proposal was more realistic.

57. Another important feature in the other proposal was access control for short-term visitors, which could be handled by a stand-alone PC system. Management points out that the Security and Safety Service decided at the time when the technical requirements were finalized to exclude short-term visitors from the access system. This appears to support the Office of Internal Oversight Services contention that there was reason to allow the other bidder to submit a revised and simpler proposal.

58. There were three revisions of the contract amount after the selection of the bidder but before the contract was signed. These changes eventually increased the above amount from US$ 911,380 to US$ 1,332,505.09, including maintenance costs. This resulted in additional charges by the vendor over and above its original bid.

59. Management points out that the cost of the other vendor's cards was significantly higher than WEC's. However, the Office of Internal Oversight Services believes that part of this cost could have been offset had the other vendor's technical proposal been scaled down as it suggested. Additionally, although cost should always be a large factor in evaluating bids, the viability of the overall proposal should also be considered.

F. Contract formulation

Deficiencies in the contract were noted.

60. The auditors found deficiencies in the formally signed contract. They noted that the final contract was prepared using two different fonts (styles). Management explained that this occurred due to the use of different word-processing software at different stages of contract development.

61. We also noted there were no penalty clause terms in the contract to penalize the vendor for failure to meet targets or schedules specified in the contract or for failure of the project to meet contract specifications. Likewise, there was no retention-of-payment provision made in the contract. The inclusion of such terms to protect the interests of the buyer has been a standard practice in project contracts. Usually a 10 per cent retention is provided for in the contract. We noted that this provision was proposed by DVI Communications, the consultant engaged by the United Nations to provide assistance in drafting the contract, i.e. 5 per cent retainage after the final acceptance test certificate is issued and 5 per cent at the end of the warranty period.

G. Resolution of disputes

Lack of coordinated approach of the United Nations to resolve contract disputes. The contract was modified to reduce the scope of work.

62. Under the initial contract, the scope of work of the United Nations access control system consisted of three hardware/software major subsystems that would all operate in concert, namely, the access control system; the garage access control system; and the badge/imaging system. However, the contract was modified after eight months to reduce the scope of the project. The garage access control system, which was a major subsystem, was deleted from the original contract. It was dropped, as agreed by both parties on 19 November 1992, because of the contractor's inability to develop and customize the software which would serve the garage access control system.

63. The reduction of the contract amount by $250,000 with deletion of the garage access control system appeared to be disproportionate to the total project cost as the loss of the garage access control system subsystem significantly affected the benefits to be gained from the project as a whole. Management submitted a table showing those specific items in the original contract that were wholly or partly taken into consideration in the reduction of the contract price. However, the Office of Internal Oversight Services is of the opinion that the Organization suffered more than the loss of the individual components of the garage access control system and thus the contract reduction should have reflected this additional loss.

H. Project delays

Imaging system originally delivered by contractor failed to function, causing project delay.

64. We noted that the imaging system originally delivered on 18 May 1992 by the subcontractor, Epic Systems, failed to function. However, before it was rejected by the United Nations, the contractor withdrew it and replaced it with a Goddard imaging system, but only on 15 October 1992, after a lapse of five months. This caused a delay in the completion of the contract. However, no attempts were made by the United Nations officials concerned to negotiate a cost reduction and/or work for the termination of the contract at this stage.

65. Final acceptance and sign-off of the United Nations access control system according to the programme schedule was scheduled for October 1992. However, in November 1992, when the garage access control system was dropped, the system was still not yet completed.

66. The contractor was not only unable to fulfil the provisions of the contract with regard to performance and delivery of the finished product, as specified in article 40, but also incurred delay as per definition of the terms of the contract. The delay was attributable to the defective imaging system, to the inability of the vendor to develop the garage access control system and, at the end, the failure of the vendor to deliver the access cards on time.

Selection of a new card technology in mid-stream caused project delay and extra cost.

67. The United Nations officials accepted a new access card technology introduced by the vendor in mid-stream although this technology was new, unproven and more costly. The vendor did not meet delivery schedules and could not provide the required number of access cards.

68. The Office of Internal Oversight Services also noted that the number of needed access cards was not properly established at the beginning of the project. This should have been included in a feasibility study. Only 10,000 cards were included in the original contract, although the request for proposal submitted to the vendors had clearly indicated a minimum requirement of 24,140 and maximum of 69,915 cards. In May 1993, after the final execution of the contract by the vendor and despite the fact that the administration had second thoughts about activating the system, 20,000 additional cards were requisitioned at a cost of US$ 110,000. This purchase order was also revised in August 1993 to suit the delivery schedules proposed by the vendor. The vendor was not able to comply with the delivery date, which was revised from May 1993 to January 1994 and final delivery was completed only in May 1994.

I. Testing of the United Nations access control system

Testing of the system and documentation relating to these tests were found inadequate. Testing of the system was not performed in accordance with the contract.

69. The demonstration and testing of the United Nations access control system was carried out in Baltimore, Maryland, on 4 March 1993.

70. We found that articles 8.0 to 8.06 of the contract on functional testing were not followed by the United Nations officials involved in the project. First, the functional testing was conducted in Baltimore, whereas the contract provided that all testing be conducted on site following the installation of each subsystem and after all three subsystems had been installed. The documentation submitted in support of the tests that took place in Baltimore appears to be inadequate because it did not follow a predetermined and preapproved test plan as called for in the contract.

71. Secondly, the final acceptance tests that the officials claimed were performed on 12 and 13 May were not conducted in accordance with the provisions stipulated in the contract. The contract provided for a minimum of 70 days of operation before a final acceptance test certificate would be issued. Management contends that, because of the deletion of the garage access control system, a period of 70 days was no longer needed and a 10-day test period or less would have been sufficient. This certificate was issued on 26 May 1993 by the United Nations officials, after only two days of system testing. The certificate appeared to have been issued prematurely, in direct contradiction with the plan communicated to WEC by the Officer-in-Charge, Buildings and Commercial Services Division, on 17 May 1993. This plan stipulated that the

United Nations would issue a certificate of final acceptance seven days after the system was placed on line, i.e. on 14 June 1994.

J. Contract amendment

Contract amendment was signed ex post facto.

72. The contract amendment was signed in August 1993 after the execution of a final acceptance test certificate, which certified the completion of the United Nations access control system. The following were the changes made ex post facto:

(a) Deletion of the subsystem pertaining to the garage access control system from the contract. All references to this subsystem were therefore removed from the contract;

(b) Replacement of the originally specified Indala RF card and reader technology by Westinghouse technology;

(c) Replacement of the USIS badge/imaging system (which failed to function when it was delivered in May 1992) by a Goddard badge imaging system (which was delivered only in October 1992, after a lapse of five months).

Original provisions of the contract were amended and various important annexes were replaced.

73. The following original provisions and annexes were amended or replaced as a result of the amendment:

(a) Article 9.04(b)

"Upon successful conclusion of the final acceptance tests of the United Nations access control system in accordance with this article and performed in accordance with annex 6, the United Nations representative and the contractor shall sign the certificate of final acceptance in the form set out in annex 13 of this contract."

The auditors noted the amendment was made to justify the limited testing of the system conducted on 12 and 13 May 1993 as well as the signing of the final acceptance test certificate in accordance with the form set out in a new added annex;

(b) Annex 6 as attached to the original contract called for the following test requirements:

"Final acceptance tests will commence only after all functional and performance tests have been satisfactorily completed. Final acceptance tests will continue for a period of 60 days."

The revised annex 6 was amended, limiting the testing of the system to include only the functional and performance tests and deleting the final acceptance

tests originally provided for (i.e. to run the system under actual operating conditions for a minimum of 60 days);

(c) Annex 5, Schedule of payments, in the original contract, provided for the payment to the vendor of US$ 142,125.76 for functional testing of the system. Annex 5 was amended. We noted that this specific milestone was changed to "United Nations approval of results of United Nations access control system functional testing of software using the WSE readers and cards in Westinghouse, Baltimore, MD". This was amended to justify the payment made to WEC, to which the United Nations officials agreed;

(d) Apart from the above-mentioned annexes, the following important annexes had also been replaced:

(i) Annex 1, Hardware bill of materials, dated 21 January 1993, 110692, revision E, attachment 1;

(ii) Annex 10, Performance bond rider, dated 26 July 1993;

(iii) Annex 12, Technical specifications, dated 24 January 1993, 110692, revision E;

(iv) A contract amendment also deleted annex 3, Bill of materials, in its entirety. It was thus difficult to determine if other equipment, materials, or peripherals, etc. had not been delivered. This ended the vendor's liability for non-delivery of all the materials listed in annex 3;

(v) Lastly, the contract amendment included a specific provision that was found irregular because it referred to the final acceptance test certificate. This certificate, in our opinion, was irregularly executed, as no final acceptance tests within the context of the provisions of the contract had been actually performed.

K. System documentation

System documentation was found inadequate.

74. The systems manual and the users manual still contained the original United Nations access control system as contracted with the garage access control system. Thus, the system and users manuals still contained information that was no longer applicable. If the documentation received from the vendor had been reviewed by United Nations officials, they should have discovered that the documentation was not updated. This was contrary to article 13.01 of the contract that "the Contractor shall provide documentation with appropriate updates to reflect the as-built system configuration for the United Nations and the software modules including the major subsystems". Article 13.03 also provides that "documentation prepared by the Contractor shall be subject to review and written approval by the United Nations". No evidence was found to indicate that a written approval was formally given. We also noted that there

was no security manual prepared to complement the system nor a maintenance manual.

L. Warranty period

The one-year system warranty was wasted.

75. The one-year warranty period went into effect from the date of the signing of the final acceptance test certificate, 26 May 1993, and expired on 25 May 1994. During this period, the system was never run under actual operating conditions.

V. LIST OF MAJOR RECOMMENDATIONS

76. The Office of Internal Oversight Services highlights in the present report the recommendations that, in its opinion, deserve priority attention from management.

(a) On project management, the Office of Internal Oversight Services recommends that, in order to help to ensure that future projects of such magnitude and complexity as the United Nations access control system would be properly planned, managed, overseen, and successfully implemented, the United Nations should develop standard project management guidelines that will provide appropriate controls. The guidelines should include a mandatory feasibility study among the detailed elements of the development process. A feasibility study is particularly important in every major project to ensure that the Organization's investment in time, effort and money is justified before it is undertaken;

(b) On procurement, the Office of Internal Oversight Services recommends that, before goods and services are acquired by the United Nations, a needs assessment is done. The Organization should establish guidelines to improve bidding procedures that include specific criteria for establishing the eligibility of the contractors during prequalification. Guidelines for the preparation of requests for proposals should be established to ensure that specifications, requirements and standards are complete. Criteria for bid evaluations and the evaluation of contractors should be developed. Functions should be segregated to ensure that the procurement function is separated from contract administration and that monitoring the project and the vendor's performance is done by the substantive office;

(c) On contract formulation, the Office of Internal Oversight Services recommends that advice and consultation should be sought from the Office of Legal Affairs whenever an amendment is contemplated and such amendments should be finalized in a timely fashion with due consideration given to the best interests of the Organization;

(d) The United Nations should also ensure that specific elements of internal control are exercised during the project life-cycle, including clear and prompt documentation of transactions and significant events and formal

approval by senior United Nations officials for all major decisions. Continuous supervision should be provided to ensure that control objectives are achieved and accountability for the use of resources is assigned and maintained.

77. As of 13 November 1995 and pursuant to the provisions of paragraph 18 of the mandate of the Office of Internal Oversight Services (ST/SGB/273), the Office has referred this matter from the Audit and Management Consulting Division to the Investigations Section for the purpose of determining whether evidence can be adduced that any current staff members have violated United Nations rules and regulations in connection with this project. Specifically, the Investigations Section has been requested to examine four areas: project planning, vendor selection, project monitoring and project acceptance. The Investigations Section may extend its review as warranted.